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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/358,738	07/21/1999	CRAIG S. CHAMBERLAIN	53321USA9B	1908

32692 7590 08/04/2003

3M INNOVATIVE PROPERTIES COMPANY  
PO BOX 33427  
ST. PAUL, MN 55133-3427

EXAMINER

LUDLOW, JAN M

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/358,738

Applicant(s)

CHAMBERLAIN ET AL

Examiner

Jan M. Ludlow

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 33,37-51 and 55-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33 and 37-49 is/are rejected.
- 7) ☒ Claim(s) 50,51 and 55-61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)  
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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1. The request filed on January 13, 2003 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/358738 is acceptable and a CPA has been established. An action on the CPA follows.

2. Claims 33, 37-51, 55-61 are objected to because of the following informalities:

Claim 33, step c, would be better relate to the preamble and determination step if amended to recite measurement of the composition. See also claim 43, step b).

Appropriate correction is required.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 33, 37-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielsen (5,334,932) in view of Tavis et al (5,293,137) and Rudnick (5,171,908) and/or Hankins (4,039,461).

4. Nielsen teaches a method of measuring inductance of a coil 62 that is changed by the presence of metal particles in a lubricant sample on core 60 within the coil (see, e.g., col. 1, lines 48-52; col. 2, lines 63-68; col. 6, lines 34-42), similar to the instantly disclosed method. A temperature-indicative resistance is provided (col. 4, line 68) and the related signal is supplied to a microprocessor, where the inductance measurement is corrected for temperature using an algorithm (col. 6, lines 49-51) to provide a highly accurate inductance measurement (col. 6, lines 53-55).

5. Nielsen fails to teach how the temperature correction algorithm is derived or a polymeric composition.

6. Tavis teaches an inductance sensing method in which a calibration table of pressure (which is a function of inductance, see, e.g., column 4, lines 15-26) vs temperature is used to correct for changes in inductance with temperature (col. 4, lines 29-30, 49-53).

7. Rudnick and Hankins each teach lubricants which are polymeric compositions.

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a look-up table in place of the algorithm of Nielsen in order

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to correct inductance-based measurements for temperature as taught by Tavis. It would have been further obvious to make measurements of inductance at difference temperatures in order to empirically determine the data points as was known in the art. It would have been obvious to use the method of Nielsen on synthetic lubricants containing polymers as taught by Rudnick and/or Hankins in order to apply the method to a class of lubricants encompassed by the broad teaching of lubricants taught by Nielsen. With respect to claims 41-42, 48-49, it would have been obvious to use a coil capable of detecting desired changes in inductance.

9. Claims 43-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rumberger (5,528,138) in view of and Rudnick (5,171,908) and/or Hankins (4,039,461).

10. Rumberger teaches an inductance measuring method for detecting magnetic particles in a lubricant. A first coil 68 measures the particles and a second coil 72 measures particle-free lubricant to compensate for changes of inductance resulting from temperature changes and the offset subtracted from the particle measurements in a bridge circuit.

11. Rudnick and Hankins each teach lubricants which are polymeric compositions.

12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of Rumberger on synthetic lubricants containing polymers as taught by Rudnick and/or Hankins in order to apply the method to a class of lubricants encompassed by the broad teaching of lubricants taught by Rumberger.

With respect to claims 48-49, it would have been obvious to use a coil capable of detecting desired changes in inductance.

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13. Applicant's arguments with respect to claims 33, 37-49 have been considered but are moot in view of the new ground(s) of rejection.


14. Claims 50-51, 56-61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach or suggest using the claimed method on the claimed materials or to determine the claimed properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (703) 308-4039. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

jml  
July 28, 2003